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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/520,376

10/21/2005

Timo Laakso

290.1128USN

2642

33369 7590 10/07/2008
FASTH LAW OFFICES (ROLF FASTH)
26 PINECREST PLAZA, SUITE 2
SOUTHERN PINES, NC 28387-4301

EXAMINER

JUNG, MIN

ART UNIT

PAPER NUMBER

2416

MAIL DATE

DELIVERY MODE

10/07/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/520,376	Applicant(s) LAAKSO ET AL.	
	Examiner Min Jung	Art Unit 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,6,7,10-19,21,23,24 and 27-34 is/are rejected.
- 7) ☒ Claim(s) 3,5,8,9,20,22,25 and 26 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 2, 9, 18, 19, 24, and 30 are objected to because of the following informalities: The words "sending", "service", "situations", "signals", and "controlling" are improperly spelled with hyphens in the middle of the words. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 4, 6, 7, 10-19, 21, 23, 24, and 27-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takatori et al., US 6,229,855 (Takatori).

Takatori teaches adaptive transmitter for digital transmission wherein the power and/or frequency output is controlled to minimize crosstalk.

Regarding claims 1 and 18, Takatori teaches a method for controlling a transmission power level in a digital subscriber line, characterized in that transmission power levels of several digital subscriber lines are controlled simultaneously by the method comprising the steps of: measuring crosstalk properties for each subscriber line in different situations (Takatori measures line loss, noise margin at the receive side

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(near-end), and the noise margin at the other side (far-end); col. 4, lines 36-41, and col. 5, lines 4-12, these measurements are measured in power level (dB) and are directed related to actual crosstalk); organizing the crosstalk properties of the different situations (Tables 1 and 2); and controlling the transmission power levels using the organized crosstalk properties (col. 5, lines 13-37, col. 7, lines 62-67, and Tables 1 and 2). What Takatori fails to teach is the estimating of crosstalk values from the measured crosstalk properties. Takatori, however, teaches evaluating the signal characteristics based mainly on the cable losses (crosstalk properties), to determine SNR (see col. 4, lines 44-52, and col. 5, lines 4-8). It is well known that SNR is directly related to crosstalk in that crosstalk contributes to SNR. Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to modify Takatori to take an extra step of estimating a crosstalk value from the measurements of the noise margin and the line loss to directly apply the crosstalk value in controlling the power level.

Regarding claims 2 and 19, and 4 and 21, Takatori teaches the preestablished Tables 1 and 2 showing the measured crosstalk properties measured in dB.

Regarding claims 6 and 23, Takatori fails to specifically teach using matrices for organizing the crosstalk values. However, the showing of the information in tables forms (Table 1 and 2) suggests that the table can be put in a matrix as matrices are well known and widely used to put data in an organized form. Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to utilize matrices when implementing the teaching of Takatori.

Regarding claims 7 and 24, Takatori teaches that SNR limitations are taken into account when controlling the transmission power level (col. 7, lines 13-52).

Regarding claims 10 and 27, Takatori teaches making the measurements off-line (col. 4, lines 36-41 and Tables 1 and 2).

Regarding claims 11 and 28, Takatori fails to specifically teach making the measurements on-line. However, it would have been obvious for one of ordinary skill in the art at the time of the invention to make the measurements on-line because such on-line measurements are well known scheme, and it would be one of the choices that the system designer would make – by choosing to make the measurements on-line, the performance overall will be more cluttered while providing more dynamic option for the measurement.

Regarding claims 12 and 29, Takatori fails to specifically mention VDSL lines. Takatori, however, teaches HDSL. VDSL and HDSL are terms devised to provide the same concept - High Speed Digital Subscriber Loop, with VDSL standing for Very High Speed Digital Subscriber Loop. Thus, Takatori's teaching can readily embrace VDSL, and therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to implement Takatori's teaching using VDSL.

Regarding claims 13 and 30, Takatori teaches making measurements in advance, before controlling the transmission powers of the lines (col. 4, lines 36-41, and Tables 1 and 2).

Regarding claims 14, 15, 31, and 32, Takatori fails to specifically teach estimating crosstalk values including crosstalk power level values and crosstalk

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coefficient values. However, Takatori provides noise margin at the receive side (near-end), noise margin at the other side (far-end), line loss, and SNR. These measurements in all the lines can readily provide the crosstalk values desired. Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to take an extra step using the gathered values to determine crosstalk power level values and crosstalk coefficient values.

Regarding claims 16, 17, 33, and 34, Takatori teaches making measurements from a downstream signal, and upstream signal (cols. 5 and 6).

Allowable Subject Matter

4. Claims 3, 5, 8, 9, 20, 22, 25, and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Bremer et al. patent, the Getchell patent, the Boroditsky et al. patent, the Niedereeder patent, the Lofland et al. patent, the Ulanskas et al. PG Pub., the Ginis et al. patent, the Gaikwad et al. patent, and the Terry PG Pub., are cited for further references.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Min Jung whose telephone number is 571-272-3127.

The examiner can normally be reached on Monday through Friday 9:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn Feild can be reached on 571-272-2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Min Jung/
Primary Examiner, Art Unit 2616